

Omprokash Das

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Current Position and Research

Position	Associate Professor, School of Mathematics, Tata Institute of Fundamental Research, Mumbai
Research	Algebraic geometry; birational and bimeromorphic geometry; Minimal Model Program; compact Kähler varieties; Abundance Conjecture

Previous Positions

2016–2019	Assistant Adjunct Professor, University of California, Los Angeles
2015–2016	Visiting Fellow, Tata Institute of Fundamental Research, Mumbai

Education

PhD, 2015	University of Utah. Thesis: Adjunction and Inversion of Adjunction in Positive Characteristic. Advisor: Christopher Hacon.
MSc, 2009	TIFR-CAM, Bangalore
BSc (Hons.), 2007	Presidency College, Calcutta

Publications and Preprints

Listed in reverse chronological order by first arXiv appearance.

- 1 Transcendental Minimal Model Program for Projective Varieties; with Christopher Hacon. accepted for publication in Algebraic Geometry. [arXiv:2412.07650](#)
- 2 ACC for LC Thresholds for Algebraically Integrable Foliations; with Jihao Liu and Roktim Mascharak. Selecta Mathematica (N.S.) 32 (2026), no. 4, Paper No. 70, 34 pp.. [arXiv:2307.07157](#) DOI: [10.1007/s00029-026-01179-1](#)
- 3 A Basepoint Free Theorem for Algebraically Integrable Foliations; with Priyankur Chaudhuri. submitted. [arXiv:2307.03530](#)
- 4 On the Minimal Model Program for Kähler 3-Folds; with Christopher Hacon. submitted. [arXiv:2306.11708](#)
- 5 On the Log Abundance for Compact Kähler Threefolds II; with Wenhao Ou. Proceedings of the London Mathematical Society 132 (2026), no. 3, Paper e70141, 63 pp.. [arXiv:2306.00671](#) DOI: [10.1112/plms.70141](#)
- 6 MMP for Generalized Pairs on Kähler 3-Folds; with Christopher Hacon and José Ignacio Yáñez. accepted for publication in Annali della Scuola Normale Superiore di Pisa. [arXiv:2305.00524](#) DOI: [10.2422/2036-2145.202506_004](#)
- 7 Existence of Good Minimal Models for Kähler Varieties of Maximal Albanese Dimension; with Christopher Hacon. Comptes Rendus Mathématique 362 (2024), Special Issue S1, 83–91. [arXiv:2208.02227](#) DOI: [10.5802/crmath.581](#)
- 8 On the 4-Dimensional Minimal Model Program for Kähler Varieties; with Christopher Hacon and Mihai Păun. Advances in Mathematics 443 (2024), Article 109615, 68 pp.. [arXiv:2205.12205](#) DOI: [10.1016/j.aim.2024.109615](#)
- 9 On the Log Abundance for Compact Kähler Threefolds; with Wenhao Ou. Manuscripta Mathematica 173 (2024), 341–404. [arXiv:2201.01202](#) DOI: [10.1007/s00229-023-01467-6](#)
- 10 The Log Minimal Model Program for Kähler 3-Folds; with Christopher Hacon. Journal of Differential Geometry 130 (2025), no. 1, 151–207. [arXiv:2009.05924](#) DOI: [10.4310/jdg/1747064823](#)
- 11 Boundedness of Log-Pluricanonical Maps for Surfaces of Log-General Type in Positive Characteristic. Osaka Journal of Mathematics 59 (2022), no. 1, 65–74. [arXiv:2003.13324](#) DOI: [10.18910/86335](#)
- 12 On the Log Minimal Model Program for Threefolds over Imperfect Fields of Characteristic $p > 5$; with Joe Waldron. Journal of the London Mathematical Society 106 (2022), no. 4, 3895–3937. [arXiv:1911.04394](#) DOI: [10.1112/jlms.12677](#)
- 13 On the Boundedness of Anti-Canonical Volumes of Singular Fano 3-Folds in Characteristic $p > 5$. International Mathematics Research Notices 2021, no. 9, 6848–6870. [arXiv:1808.02102](#) DOI: [10.1093/imrn/rnz048](#)
- 14 Finiteness of Log Minimal Models and Nef Curves on 3-Folds in Characteristic $p > 5$. Nagoya Mathematical Journal 239 (2020), 76–109. [arXiv:1711.10901](#) DOI: [10.1017/nmj.2018.28](#)
- 15 Kawamata-Viehweg Vanishing Theorem for del Pezzo Surfaces over Imperfect Fields of Characteristic $p > 3$. Osaka Journal of Mathematics 58 (2021), no. 2, 477–486. [arXiv:1709.03237](#) DOI: [10.18910/79435](#)

- 16 Appendix A: Contracting the Section of a Weierstrass Threefold. published appendix contribution to Bridgeland Stability on Blow Ups and Counterexamples by Cristian Martinez and Benjamin Schmidt · Mathematische Zeitschrift 292 (2019), nos. 3–4, 1509–1510. [arXiv:1708.08567](#) DOI: [10.1007/s00209-018-2149-3](#)
- 17 On the Abundance Problem for 3-Folds in Characteristic $p > 5$; with Joe Waldron. Mathematische Zeitschrift 292 (2019), nos. 3–4, 937–946. [arXiv:1610.03403](#) DOI: [10.1007/s00209-018-2110-5](#)
- 18 The F-Different and a Canonical Bundle Formula; with Karl Schwede. Annali della Scuola Normale Superiore di Pisa, Classe di Scienze (5) 17 (2017), 1173–1205. [arXiv:1508.07295](#) DOI: [10.2422/2036-2145.201510_012](#)
- 19 On the Adjunction Formula for 3-Folds in Characteristic $p > 5$; with Christopher Hacon. Mathematische Zeitschrift 284 (2016), nos. 1–2, 255–269. [arXiv:1505.05903](#) DOI: [10.1007/s00209-016-1655-4](#)
- 20 On Strongly F-Regular Inversion of Adjunction. Journal of Algebra 434 (2015), 207–226. [arXiv:1310.8252](#) DOI: [10.1016/j.jalgebra.2015.03.025](#)

Invited and Conference Talks

- Survey on the Minimal Model Program for Kähler Varieties. RMS Algebraic Geometry Symposium, Bengaluru · 2026.
- Invited speaker, Higher Dimensional Algebraic Geometry. National Center for Theoretical Sciences, Taipei · April 2026.
- Transcendental base-point freeness and minimal models for projective varieties. Yau Mathematical Sciences Center, Tsinghua University, Beijing · February 21, 2025.
- Transcendental base-point freeness and minimal models for projective varieties. Beijing International Center for Mathematical Research, Peking University · February 19, 2025.
- Recent developments in the Minimal Model Program for Kähler varieties. Algebraic Geometry Seminar, Universität des Saarlandes · 2023 · online.
- Recent developments in the Minimal Model Program for Kähler varieties. Tsinghua Algebraic Geometry Seminar · 2023 · online.
- Generalized MMP for Kähler Varieties. Alpine Meeting on Non-positive Curvature in Kähler Geometry, France · 2023.
- MMP for Kähler 4-folds. Thursday Colloquium, TIFR Mumbai · March 17, 2022.
- Log Minimal Model Program for Kähler 3-folds. Zoom Algebraic Geometry Marathon · 2020.
- Minimal Model Program. Virtual Math Fest · 2020.
- Minimal Model Program. Colloquium, IIT Bombay · 2019.
- Weak-Boundedness of Fano 3-folds in characteristic $p > 5$. Algebraic Geometry Seminar, Chennai Mathematical Institute · 2019.
- Weak-Boundedness of Fano 3-folds in characteristic $p > 5$. Algebraic Geometry Seminar, TIFR Mumbai · 2019.
- Weak-Boundedness of Fano 3-folds in characteristic $p > 5$. Advances in Birational Geometry, AMS Sectional Meeting, University of Arkansas · 2018.
- Kawamata-Viehweg vanishing theorem for del Pezzo surfaces over imperfect fields in characteristic $p > 3$. Special Session in Algebraic Geometry II, AMS Sectional Meeting, UC Riverside · November 5, 2017.
- Birational geometry of surfaces and threefolds over imperfect fields. Algebraic Geometry Seminar, UC San Diego · 2017.
- On the abundance problem in positive characteristic. Algebraic Geometry Seminar, UC Santa Barbara · 2016.
- On the abundance problem in positive characteristic. Algebraic Geometry Seminar, UC Riverside · 2016.
- On the abundance problem in positive characteristic. Algebra Seminar, UCLA · 2016.
- A Glimpse of Higher Dimensional Minimal Model Program. Mini-lecture series (3 lectures), TIFR · December 2015.
- Higher Dimensional Minimal Model Program or Mori Program in Characteristic $p > 0$. Mathematics Seminar, Indian Statistical Institute · November 2015.
- Adjunction and Inversion of Adjunction Properties of MMP Singularities and F-singularities in Positive Characteristic. Mathematics Colloquium, TIFR · November 2015.
- What is Minimal Model Program (MMP)? Student Seminar, TIFR · August 2015.
- Adjunction and Inversion of Adjunction in Positive Characteristic. Algebraic Geometry Seminar, Johns Hopkins University · Spring 2015.
- On the Adjunction formula on 3-folds in characteristic $p > 0$. Poster, Western Algebraic Geometry Symposium, University of Idaho · Fall 2014.
- On Strongly F-Regular Inversion of Adjunction. Algebra and Number Theory Seminar, Penn State University · Fall 2013.
- On Strongly F-Regular Inversion of Adjunction. Algebraic Geometry Seminar, University of Utah · Fall 2013.
- On Strongly F-Regular Inversion of Adjunction. Poster, Western Algebraic Geometry Symposium, UC San Diego · Fall 2013.

Grants and Awards

- 2020–2022 — Start-up Research Grant (SRG), SERB, Government of India, Grant No. SRG/2020/000348
- 2018 — Merit Upgrade, UCLA
- 2016–2018 — AMS–Simons Travel Grant Award
- 2015 — INSPIRE Faculty Award, DST, Government of India

Advising and Mentoring

- Current PhD student: Swapnajit Das, Tata Institute of Fundamental Research, Mumbai.
- Current Postdoc: Sudipta Das, 2024–2026.
- MSc thesis: Advait Nair, The UM-DAE Centre for Excellence in Basic Sciences (CEBS), 2024.
- MSc thesis: Roktim Mascharak, Tata Institute of Fundamental Research, Mumbai, 2023.
- Former PhD mentoring: Roktim Mascharak, Tata Institute of Fundamental Research, Mumbai (approximately 1.5 years).
- Postdoctoral mentoring: Priyankur Chaudhuri, 2022–2023.

Teaching

Graduate and topics courses at TIFR and TIFR-CAM. Course materials are maintained on the academic website.

Professional Service and Organization

- December 2025 — Convener, NCM Workshop on Toric Varieties, Kerala School of Mathematics
- Fall 2024 — Co-organizer, TIFR Algebraic Geometry Preprint Seminar
- Summer 2023 — Organizer, NCM/AIS School on Topics in Birational Geometry
- 2022 — Co-organizer, VSRP, with Eknath Ghate
- April 2020–May 2022 — Co-organizer, Zoom Algebraic Geometry Seminar (ZAGS)
- March 2020–December 2021 — Colloquium Chair, School of Mathematics, TIFR